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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,593	11/07/2001	Yuji Matsuda	2001-1137A	7900

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EXAMINER

AGUSTIN, PETER VINCENT

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,593

Applicant(s)

MATSUDA, YUJI

Examiner

Peter Vincent Agustin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/30/01 & 11/28/01.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure is objected to because of the following informalities:
Page 10, line 13: "drive" should be --driver--.
Appropriate correction is required.
4. Claims 2, 4, 7-10 & 13-16 are objected to because of the following informalities:
Claim 2, line 3 recites the limitation "the driver IC", which can either refer to the claimed "actuator driver IC" only, or every one of the claimed "spindle driver IC", "traverse driver IC", and "actuator driver IC".

Claims 4 & 7-9, lines 2 & 4: "spindle" should be --traverse--, as described on page 10, lines 2-5 of the specification.

Claims 7, 10 & 13-16 are dependent upon objected base claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 5 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hachi (JP 2000-090563) (see translation) in view of Takaishi (US 6,160,676).

In regard to claim 1, Hachi discloses an optical disk device (Drawing 1) for recording/reproducing data on/from an optical disk (D), comprising: a monitor circuit (Drawing 3, element 25F or 25T) for monitoring a junction temperature of a chip of a driver IC (an inherent component of the element that drives focusing coil 4 and tracking coil 5, see figure 9. NOTE: It is well-known in the art that ICs are necessary components of drivers of devices that induce motion, such as motors.) for driving a recording/reproduction driving system (in this case, the focusing/tracking driving system), and a comparison circuit (Drawing 3, elements 26F or 26T) for comparing an output of the monitor circuit with an arbitrary set temperature and outputting a temperature flag as a comparison result (output of element 27); and a CPU (Drawing 1, element 23) for controlling the operation of the entire optical disk device (paragraph 12, lines 8-9) as well as monitoring the temperature flag outputted from the comparison circuit (see the text on right side of element 27), said CPU performing a control so as to continue driving of the optical disk device when the junction temperature is lower than the arbitrary set temperature, and performing a control so as to suppress heat generation of the driver IC when the junction temperature is equal to or higher than the arbitrary set temperature (paragraph 18). However, in regard to claim 1, Hachi does not explicitly disclose that the circuits (monitor circuit and comparison circuit) are included in the driver IC.

Takaishi discloses a temperature sensor 29 for detecting the temperature of microactuator drivers, and a device for determining whether the temperature is higher than a predetermined

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value (column 9, lines 16-20), wherein the temperature sensor is included in the driver IC (column 9, lines 21-23: "encased in an IC"). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have included the circuits of Hachi in the driver IC as suggested by Takaishi, the motivation being to integrate the components in order to simplify the structure of the device. Furthermore, including the monitor circuit and comparison circuit of Hachi in the driver IC as suggested by Takaishi would have been an obvious matter of design choice.

In regard to claim 2, Hachi discloses a spindle driver IC (an inherent component of Drawing 1, element 17), a traverse driver IC (an inherent component of element 19), and an actuator driver IC (an inherent component of element 21) as the driver IC. NOTE: It is well-known in the art that ICs are necessary components of drivers of devices that induce motion, such as motors.

In regard to claims 5 & 10, Hachi discloses that a control for suppressing heat generation of the actuator driver IC is exerted so as to reduce the number of revolutions of the optical disk (paragraph 18: "lowering the rotational frequency"). However, in regard to claims 5 & 10, Takaishi does not explicitly disclose that the actuator driver IC internally has the monitor circuit and the comparison circuit.

Takaishi discloses that the temperature sensor 29 is provided internally in the actuator driver IC (column 9, lines 21-23: "encased in an IC"). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have included the monitor circuit and the comparison circuit of Hachi in the actuator driver IC as suggested by Takaishi, the motivation being to integrate the components in order to simplify the structure of the device.

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Furthermore, including the monitor circuit and comparison circuit of Hachi in the actuator driver IC as suggested by Takaishi would have been an obvious matter of design choice.

7. Claims 3, 6, 11 & 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hachi & Takaishi as applied to claim 1 above, and further in view of Koo (US 5,621,710).

For a description of Hachi & Takaishi, see the rejection above. However, in regard to claims 3 & 6, Hachi & Takaishi do not explicitly disclose that the spindle driver IC internally has the monitor circuit and the comparison circuit, and a control for suppressing heat generation of the spindle driver IC is exerted so as not to perform a forced acceleration or forced deceleration of the optical disk for an arbitrary period of time.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided the monitor circuit and the comparison circuit of Hachi & Takaishi internally with the spindle driver IC because applicant has not disclosed that this specific arrangement provides an advantage, is used for a particular purpose, or solves a stated problem, and one of ordinary skill in the art would have expected applicant's invention to perform equally well with either the monitor circuit and the comparison circuit provided internally with the actuator driver IC taught by Hachi & Takaishi or the claimed monitor circuit and comparator circuit provided internally with the spindle driver IC because both arrangements perform the same function of preventing excessive heat from damaging the device. Furthermore, choosing either arrangement would have been an obvious matter of design choice.

Koo discloses that a control for suppressing heat generation of a spindle driver IC is exerted so as not to perform a forced acceleration or forced deceleration of an optical disk for an arbitrary period of time (column 1, line 61 thru column 2, line 7). It would have been obvious to

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one of ordinary skill in the art at the time of invention by the applicant to have provided the control for suppressing heat generation of Koo to the device of Hachi & Takaishi, the motivation being to reduce heat, thereby preventing damage to the device.

In regard to claims 11 & 12, these claims have limitations that are similar to those of claim 5, thus they are rejected with the same rationale applied against claim 5 above.

8. Claims 4, 7, 13 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hachi & Takaishi as applied to claim 1 above, and further in view of Ueki (JP 11-016243) (see translation).

For a description of Hachi & Takaishi, see the rejection above. However, in regard to claims 4 & 7, Hachi & Takaishi do not explicitly disclose that the traverse driver IC internally has the monitor circuit and the comparison circuit, and a control for suppressing heat generation of the traverse driver IC is exerted so that a free run state of the optical disk is included in changes in revolution of the optical disk.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have provided the monitor circuit and the comparison circuit of Hachi & Takaishi internally with the traverse driver IC because applicant has not disclosed that this specific arrangement provides an advantage, is used for a particular purpose, or solves a stated problem, and one of ordinary skill in the art would have expected applicant's invention to perform equally well with either the monitor circuit and the comparison circuit provided internally with the actuator driver IC taught by Hachi & Takaishi or the claimed monitor circuit and comparator circuit provided internally with the traverse driver IC because both arrangements

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perform the same function of preventing excessive heat from damaging the device. Furthermore, choosing either arrangement would have been an obvious matter of design choice.

Ueki discloses that a control for suppressing heat generation of a traverse driver IC (paragraph 9: "integrated circuit with which the circuit which controls actuation") is exerted so that a free run state of an optical disk is included in changes in revolution of the optical disk (see abstract, problem to be solved). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have provided the control for suppressing heat generation of Ueki to the device of Hachi & Takaishi, the motivation being to evade excessive rise of temperature and to prevent the deterioration of control ability.

In regard to claims 13 & 14, these claims have limitations that are similar to those of claim 5, thus they are rejected with the same rationale applied against claim 5 above.

9. Claims 8, 9, 15 & 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hachi, Takaishi & Koo as applied to claims 3 & 6 above, and further in view of Ueki.

For a description of Hachi, Takaishi & Koo, see the rejection above.

In regard to claims 8 & 9, these claims have limitations that are similar to those of claim 4, thus they are rejected with the same rationale applied against claim 4 above.

In regard to claims 15 & 16, these claims have limitations that are similar to those of claim 5, thus they are rejected with the same rationale applied against claim 5 above.

Citation of Relevant Prior Art

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ogata (JP 63269376) discloses protecting the operation of a chip at an abnormal high temperature in order to prevent an IC from being damaged due to heat.

Okamoto (JP 01292667) discloses detecting whether a spindle motor reaches a prescribed temperature in order to prevent the temperature rise of the spindle motor.

Abe et al. (JP 02094027) disclose a control means for controlling the temperature of a recording medium at a prescribed temperature in order to stably maintain a prescribed recording/reproducing performance without the influence of ambient temperature change and heating inside the device.

Kono (US 5,274,622) discloses a temperature detection device for detecting the chip temperature of a laser diode and a temperature correction device for correcting the emission power of the laser diode on the basis of the detected temperature.

Niwayama (JP 06028701) discloses a temperature sensor for detecting the temperature of an optical pickup and outputs a signal to a temperature discrimination circuit. The signal is compared with a preset temperature and a CPU stabilizes power supply based on the result.

Mihara et al. (JP 06162592) disclose stopping the operation of a device when the ambient temperature of a disk drive is detected to exceed a critical temperature.

Yamada et al. (US 5,331,615) discloses a temperature sensor for detecting the temperature around a tracking actuator.

Miyaoka et al. (US 5,398,227) disclose a temperature sensor which is provided in the vicinity of an optical head. Figure 1 shows a controller for controlling the number of revolutions of an optical disk.

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Juso et al. (US 5,790,511) disclose a cooling fan that prevents heat from an IC drive circuit for driving a spindle motor and heat generated from the recording medium. As described in the background, the IC drive circuit is "not shown" in figure 6. However, one of ordinary skill in the art would know that an IC drive circuit is a necessary component of spindle motor drivers.

Yamamoto (US 6,130,868) discloses decreasing the rotational speed in order to generate less heat by the spindle motor and the motor driver circuit, thereby to prevent overheating.


Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent Agustin whose telephone number is 703-305-8980. The examiner can normally be reached on Monday-Friday 9:30-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 703-305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peter Vincent Agustin
Art Unit 2652
October 14, 2004


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10/31/04